

BOOK REVIEW

Grass Systematics and Evolution, edited by Thomas R. Soderstrom, Khidir W. Hilu, Christopher S. Campbell, and Mary E. Barkworth. Smithsonian Institution Press, Washington, D. C., 1988. xiv + 474 pp. illustrations. ISBN 0-87474-300-1. \$45 hardcover.

In July, 1986, some 150 students of grass systematics from North and South America, Europe, Africa, Asia, Australia, and New Zealand gathered at the Smithsonian Institution's Natural History Museum to discuss the systematics and evolutionary biology of grasses. The genuinely international character of the International Symposium on Grass Systematics and Evolution should not have been a surprise, for the principal organizer was Thomas Soderstrom. Soderstrom was known for his enthusiastic encouragement of—and collaboration with—numerous members of the worldwide community of grass systematists. His death in 1987 prevented him, however, from witnessing the publication of this attractive, cleanly edited volume of papers from the symposium.

The book's 33 papers are organized under seven headings (Structural Diversity; Biochemical Diversity; Reproductive Biology; Evolution; Systematics of Major Groups; Taxonomic Data and Analysis; and Grasses: Past, Present, and Future). The majority of the contributions are review papers, and with few exceptions the coverage under each heading is rather complete (e.g., under Biochemical Diversity are treatments of photosynthetic pathways, chloroplast DNA, nuclear DNA, amino-acid profiles, and isozymes). Following the papers are a composite 71-page bibliography and an index to taxonomic names. The organization of this volume directly reflects that of the symposium, with each major section more or less corresponding to the proceedings of a given morning or afternoon of the conference.

The conveners apparently called for a survey of grass systematics, and the contributors provided it. While symposium volumes often comprise odd combinations of articles that take off in their own directions, this one represents a theme developed. Unfortunately, comprehensiveness and consistency seem to have been provided at the cost of original analysis and synthesis. Even as reviews, several of the articles discuss little that is new; they repeat the contents of earlier reviews, cite a few of the most recent papers, and sign off. Others do present fresh overviews of segments of the literature that were in need of such treatment. Although the majority of the offerings are reviews, the volume also includes some significant original contributions (e.g., Barkworth and Everett on generic delimitation and alignments in the Stipeae, Campbell and Kellogg on cladistic structure of the Poales, Kellogg and Campbell on cladistic structure of the Poaceae, Soderstrom and Ellis on tribal delimitation in the Bambusoideae, and Zuloaga on infrageneric classification of *Panicum*).

This volume also gives the reader a sense of the level of satisfaction in the agrostological community with the now-conventional five-subfamily system; it seems to me that there is more complacency than there should be. The Festucoid/Panicoid dichotomy, which served agrostologists well in its time, has finally passed away. Indeed, the 1959 Montreal grass symposium, to which the Washington symposium might be compared, is remembered today in large part for the boost it gave to the five-subfamily system, which was then emerging. One could not have expected a new synthesis to appear on cue in 1986, but a little more questioning of the current system might have gone a long way. The subfamily Arundinoideae, for instance, is widely acknowledged to be an unnatural assemblage. Most of the authors surveying particular sorts of characters mention this in passing but seem content to catalog the odd character combinations that occur in the group, note the need for further analysis, and then move on to the other, more clearly defined subfamilies. Specific attention to the realignment of arundinoid elements, and to other outstanding problems with the current system, would have evidenced a greater interest in progress.

Despite these problems, the volume does include many useful reviews, as well as a handful of original contributions. Even the weaker reviews provide citations of the key literature. Consequently, the book's greatest success is as a wide-ranging survey of grass systematics, and as the best available point of entry into the enormous literature of this discipline. Properly supplemented, it might even serve as the principal text for a course on the subject. Agrostologists would be well advised to have a copy close at hand. — JERROLD I. DAVIS, L. H. Bailey Hortorium, Cornell University, Ithaca, New York 14853.